

172E-13.8-ON

830 Watt, non isolated, single output buck converter with internal decoupling diode

All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 60,0\text{ ADC}$ and $U_{iNom} = 48\text{VDC}$

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	75.00
Feedback protection against overvoltage on the output	VDC	16
Worst case output voltage in fault mode	VDC	18
Output overvoltage protection	VDC	15.6

THERMAL CHARACTERISTICS

parameter	min to max	typ
Ambient temperature range	$-40^{\circ}\text{C} / +85^{\circ}\text{C}$	
Max. case temperature for thermal shut down [$^{\circ}\text{C}$]		$+90^{\circ}\text{C}$
Storage temperature [device not in operation]	$-10^{\circ}\text{C} / +65^{\circ}\text{C}$	
Relative maximum humidity under storage		75% RH
Storage under worst conditions [in days]		25

COMMUNICATION INTERFACE

parameter	unit	fulfilled	conditions	min to max
Option Enable [connect to Vin for operation]		✓		
Enable voltage for transformer	VDC		I_{oNom}	16,0 to 75,0

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			110
Efficiency at light loads	%		$0.25I_{oNom}$	96.00
Efficiency at medium loads	%		$0.5I_{oNom}$	95.00
Efficiency at full loads	%		I_{oNom}	95.00
MTTF	h		SN29500 @ 70°	800 000
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		
Insulation strength primary to case	VDC			1500

COMPLIANCE

parameter	fulfilled	notes
61000-6-2 [EMC-Immunity standard for industrial environment]	✓	
61000-4-2 [immunity against ESD-electrostatic discharge]	✓	
61000-4-3 [immunity High frequency electromagnetic fields]	✓	
61000-4-4 [immunity against burst - electrical fast transients]	✓	
61000-4-5 [immunity against surge - high energy surges]	✓	
61000-4-6 [immunity against induced, conducted disturbances]	✓	

All technical and general information is provided in all conscience. However, completeness and accuracy cannot be guaranteed. Demke recommends to fully test the product in its determined application. Due to permanent improvements to our products, we reserve the right to change specifications at any time and without prior notification and without obligation to update products already supplied. This is a component for professional equipment manufacturers. Read the safety and installation instruction for proper use. Safety aspect and EMC-aspect must be considered in the end application.

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61000-6-4 (EMC - Emission standard for industrial environment)	✓
55022<A	✓

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	18	48	70
Max. input current	A	UiNom		46	
Input start up voltage	VDC	UiNom		18.0	
Undervoltage lockout	VDC	UiNom		15.0	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		13.8	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
Output voltage accuracy	%	IoNom		+/-3,00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			830	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.20	
Static load regulation	%	IoMin...IoMax/UiNom		4.0	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.60	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		1.00	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		500	
Softstart ramp up time	ms	IoNom		50	

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MECHANICAL parameter

parameter	unit	
Overall dimensions	mm	130x130x28
Weight	g	980

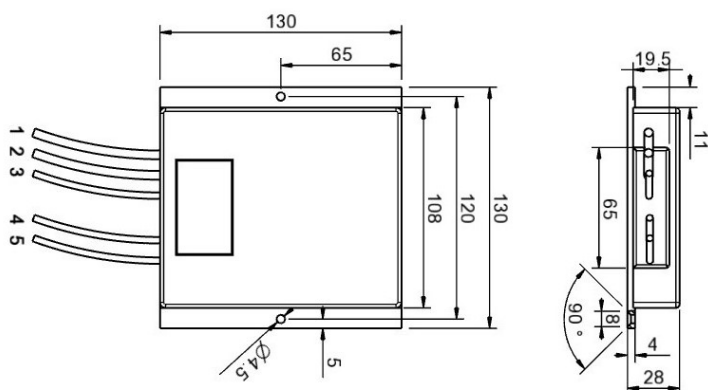
Pin No.	Function	Electrical Determination	Colour	Cross-Section	Cable length
1	On	Enable	blue	2.5 mm ²	300 mm
2	Vi+	Input voltage positive	red	6 mm ²	300 mm
3	Vi-	Input voltage negative	black	6 mm ²	300 mm
4	Vo-	Output voltage negative	brown	10 mm ²	300 mm
5	Vo+	Output voltage positive	red	10 mm ²	300 mm

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: cable

Case: FMC 130x130x28



This technical datasheet is preliminary, specs may vary slightly.

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